

Attorney Docket: 225/50834
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: EGON KATZ ET AL
Serial No.: TO BE ASSIGNED PCT NO.: PCT/EP01/04285
Filed: January 9, 2002
Title: METHOD FOR THE DYNAMIC ADAPTATION OF THE
SUPPORT OF THE BODY OF A PERSON SEATED ON A
VEHICLE SEAT AND VEHICLE SEAT FOR THIS PURPOSE

PRELIMINARY AMENDMENT

Box PCT
Commissioner for Patents
Washington, D.C. 20231

January 9, 2002

Sir:

Please enter the following amendments to the claims prior to the examination of the application.

IN THE CLAIMS:

Please amend claims 1, 3, 5-8 and 10-13 as follows (**a copy of the marked-up version of the amended claims is attached to this Preliminary Amendment**):

1. (Amended) Method for dynamic adaptation of the support of the body, in particular the lateral support, of a person seated on a vehicle seat, in which a measure of a current adaptation taking into account the current vehicle velocity is predicted and is set by an adaptation system which is integrated in the vehicle seat, characterized in that the prediction is performed from stored data over the current road course, onto which data the current vehicle data are

projected, and in that the adaptation system is actuated taking into account the adaptation time inherent in the system, in such a way that, when the event requiring the adaptation occurs, preferably when a bend is traveled through, at least one adaptation presetting adapted thereto is achieved.

3. (Amended) Method according to Claim 1, characterized in that the current road course is obtained from a digital road map which contains route data relating to a traffic network and attribute data assigned to the route data, in that data of seat adaptations which have been carried out is stored in an assignment to route data as adaptation attributes in the road map, and in that, when the route section is traveled along again, the adaptation system is actuated using the adaptation attributes.

5. (Amended) Method according to Claim 1, characterized in that, in order to determine the adaptation measure required when a bend is traveled through, the expected lateral acceleration which acts on the vehicle seat is predicted and the degree of lateral support is thus calculated.

6. (Amended) Method according to Claim 2, characterized in that when the bend is being traveled through the lateral acceleration which really occurs is measured and the degree of lateral support is thus corrected.

7. (Amended) Method according to Claim 3, characterized in that the predicted and/or measured lateral acceleration is stored as adaptation attribute.

8. (Amended) Method according to Claim 5, characterized in that when the maximum value of the lateral acceleration which is derived from a

predicted limiting velocity for travelling through a bend is exceeded by the predicted lateral acceleration a warning signal for the driver is issued.

10. (Amended) Vehicle seat having a seat part and a backrest, having an adaptation system for adapting the body support, in particular the lateral support, of a person seated on the vehicle seat, which have the air cushions which are integrated at least in side bulges of the seat part and/or backrest, and a compressed air regulating device for adjusting the air pressure in the air cushions, with a control unit which has a control computer and is connected to the compressed air regulating device and generates, from a lateral acceleration value fed to it, a control signal for setting a filling pressure by the pressure regulating device, and to a sensor for measuring the vehicle velocity, characterized by a prediction device for predicting the lateral acceleration expected in a current curve, and a prediction filter which applies the predicted lateral acceleration to the control unit taking into account the filling pressure-dependent filling times of the adaptation system.

11. (Amended) Vehicle seat according to Claim 10, characterized in that the prediction device has a digital road map which contains route data relating to a traffic network and attribute data assigned to the route data, in that time points of a change in filling pressure by the compressed air regulating device can be stored in a relationship with the vehicle velocity and the route data as adaptation attributes in the road map, and in that, when the route section is traveled along again, the prediction filter adapts the adaptation attributes to the

current driving velocity and uses it to specify the time when the predicted lateral acceleration is applied to the control unit.

12. (Amended) Vehicle seat according to Claim 10, characterized in that the prediction device has a digital road map which contains route data relating to a traffic network and attribute data assigned to the route data, in that filling pressures which are implemented by the compressed air regulating device can be stored, in a velocity-corrected fashion, in a relationship with the route data as adaptation attributes in the road map, and in that, when the route section is traveled along again, the prediction filter directly applies the adaptation attributes to the control computer as set point pressure values.

13. (Amended) Vehicle seat according to Claim 10, characterized in that the prediction device predicts a maximum value of the lateral acceleration from a predicted limiting velocity with which a current bend can be traveled through, and in that when the maximum value is exceeded by the predicted lateral acceleration, said prediction device applies a maximum pressure value as a set point pressure value for setting the filling pressure in the filling cushions which are arranged on the side of the vehicle seat located on the outside in the direction of curvature of the bend.

REMARKS

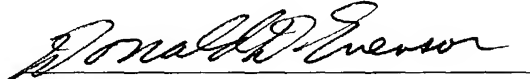
Entry of the amendments to the claims before examination of the application is respectfully requested. These claims have been amended to remove multiple dependencies.

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If there are any questions regarding this Preliminary Amendment or this application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

Respectfully submitted,



Donald D. Evenson
Registration No. 26,160
Song Zhu
Registration No. 44,420

CROWELL & MORING, LLP
Intellectual Property Group
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 624-2500
Facsimile No.: (202) 628-8844
DDE:SZ:tlm
(CAM #: 95309.283)

VERSION WITH MARKINGS TO SHOW CHANGES MADE TO THE CLAIMS

Please amend claims 1, 3, 5-8 and 10-13 as follows:

1. (Amended) Method for dynamic adaptation of the support of the body, in particular the lateral support, of a person seated on a vehicle seat [(10)], in which a measure of a current adaptation taking into account the current vehicle velocity is predicted and is set by an adaptation system which is integrated in the vehicle seat, characterized in that the prediction is performed from stored data over the current road course, onto which data the current vehicle data are projected, and in that the adaptation system [(18)] is actuated taking into account the adaptation time inherent in the system, in such a way that, when the event requiring the adaptation occurs, preferably when a bend is traveled through, at least one adaptation presetting adapted thereto is achieved.

3. (Amended) Method according to Claim 1 [or 2], characterized in that the current road course is obtained from a digital road map which contains route data relating to a traffic network and attribute data assigned to the route data, in that data of seat adaptations which have been carried out is stored in an assignment to route data as adaptation attributes in the road map, and in that, when the route section is traveled along again, the adaptation system [(18)] is actuated using the adaptation attributes.

5. (Amended) Method according to [one of Claims 1 to 5] Claim 1, characterized in that, in order to determine the adaptation measure required

when a bend is traveled through, the expected lateral acceleration which acts on the vehicle seat is predicted and the degree of lateral support is thus calculated.

6. (Amended) Method according to Claim 2 [and 5], characterized in that when the bend is being traveled through the lateral acceleration which really occurs is measured and the degree of lateral support is thus corrected.

7. (Amended) Method according to Claim 3 [Claim 3 and 5 or 6], characterized in that the predicted and/or measured lateral acceleration is stored as adaptation attribute.

8. (Amended) Method according to [one of Claims 5 to 7] Claim 5, characterized in that when the maximum value of the lateral acceleration which is derived from a predicted limiting velocity for travelling through a bend is exceeded by the predicted lateral acceleration a warning signal for the driver is issued.

10. (Amended) Vehicle seat having a seat part [(11)] and a backrest [(12)], having an adaptation system [(18)] for adapting the body support, in particular the lateral support, of a person seated on the vehicle seat [(10)], which have the air cushions [(14-17)] which are integrated at least in side bulges of the seat part [(11)] and/or backrest [(12)], and a compressed air regulating device [(22)] for adjusting the air pressure in the air cushions [(14-17)], with a control unit [(19)] which has a control computer [(25)] and is connected to the compressed air regulating device [(22)] and generates, from a lateral acceleration value fed to it, a control signal for setting a filling pressure by the pressure

regulating device [(22)], and to a sensor [(30)] for measuring the vehicle velocity, characterized by a prediction device [(32)] for predicting the lateral acceleration expected in a current curve, and a prediction filter [(36)] which applies the predicted lateral acceleration to the control unit [(19)] taking into account the filling pressure-dependent filling times of the adaptation system [(18)].

11. (Amended) Vehicle seat according to Claim 10, characterized in that the prediction device [(32)] has a digital road map which contains route data relating to a traffic network and attribute data assigned to the route data, in that time points of a change in filling pressure by the compressed air regulating device [(22)] can be stored in a relationship with the vehicle velocity and the route data as adaptation attributes in the road map, and in that, when the route section is traveled along again, the prediction filter [(33)] adapts the adaptation attributes to the current driving velocity and uses it to specify the time when the predicted lateral acceleration is applied to the control unit [(19)].

12. (Amended) Vehicle seat according to Claim 10, characterized in that the prediction device [(32)] has a digital road map which contains route data relating to a traffic network and attribute data assigned to the route data, in that filling pressures which are implemented by the compressed air regulating device [(22)] can be stored, in a velocity-corrected fashion, in a relationship with the route data as adaptation attributes in the road map, and in that, when the route section is traveled along again, the prediction filter [(33)] directly applies the adaptation attributes to the control computer [(25)] as set point pressure values.

13. (Amended) Vehicle seat according to [one of Claims 10 to 12] Claim 10, characterized in that the prediction device [(32)] predicts a maximum value of the lateral acceleration from a predicted limiting velocity with which a current bend can be traveled through, and in that when the maximum value is exceeded by the predicted lateral acceleration, said prediction device [(32)] applies a maximum pressure value as a set point pressure value for setting the filling pressure in the filling cushions [(14-17)] which are arranged on the side of the vehicle seat [(10)] located on the outside in the direction of curvature of the bend.